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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,202	04/11/2001	Jameel Menashi	01023	1699

7590 08/04/2005

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EXAMINER	
ALEJANDRO, RAYMOND	

ART UNIT	PAPER NUMBER
1745	

DATE MAILED: 08/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/833,202	MENASHI, JAMEEL	
	Examiner	Art Unit	
	Raymond Alejandro	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/04/04 (petition decision) & 01/27/04*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) *2,9, 11-13 and 15-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-8,10,14 and 17-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *03/03/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This office action is being provided in reply to the petition decision of 06/04/04 and applicant's communication of 01/27/04. The applicant has overcome the 35 USC 102 rejection. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments. However, the instant claims (including newly added claims 17-25) are finally rejected over newly discovered art as set forth hereinbelow and for the reasons of record:

Election/Restrictions

1. This application contains claims 2, 9, 11-13 and 15-16 drawn to an invention nonelected with traverse in Paper No. 03/03/03. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 03/03/05 was considered by the examiner.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 3-8, 10 and 14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-8, 10 and 14 of copending Application No. 10/112689 **(Patent Application Publication US 2003/0017379)**.

The copending application No. 10/112689 **(Pub. No. US 2003/0017379)** claims the following (see claims 1, 3-8, 10 and 14):

> 1. A fuel cell comprising a gas diffusion electrode, a gas diffusion counter-electrode, a solid electrolyte membrane located between the electrode and counter-electrode, wherein the electrode or the counter-electrode or both comprise at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group, wherein said carbon product is a silicon-treated carbon black or a metal-treated carbon black.
>
> 3. The fuel cell of claim 1, wherein said gas diffusion electrode and gas diffusion counter-electrode each comprise a blocking layer and an active layer.
>
> 4. The fuel cell of claim 3, wherein said active layer or said blocking layer or both comprise at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
>
> 5. The fuel cell of claim 3, wherein said active layer has a thickness of less than about 10 microns.
>
> 6. The fuel cell of claim 3, wherein said active layer comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group and a metal catalyst.

7. The fuel cell of claim 3, wherein said active layer has no fluoropolymer binder present.

8. The fuel cell of claim 1 wherein said solid electrolyte membrane comprises polytetrafluoroethylene.

10. The fuel cell of claim 1, wherein said organic group is $—C_6H_4SO_3^-$.

14. The fuel cell of claim 1, wherein said organic group is a proton conducting group, an electron conducting group, or both.

In this case, it is noted that the instant application claims (S/N 09/833202, namely, first application) is broader or more generic than the claims of the copending application (S/N 10/112689, namely, second application), thus, the first application claims are anticipated by the second application. In re Goodman. Accordingly, a claim containing a broad limitation is anticipated by another claim containing a narrow limitation which lies within the broad range. For instance, the claims of the copending application 10/112689 are considered to contain a narrower scope as such claims are further reciting that the carbon product is a silicon-treated carbon black or a metal-treated carbon black. Additionally, claim 5 of the copending application'689 claims the active layer having a thickness of less than about 10 μm (See CLAIM 5 of the copending application'689). Thus, the copending application encompasses and at once envisages active layer having thickness as instantly claimed. Thus, such thickness of the active layer represents an obvious variation directly taught in the copending applicaton'689.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-8, 10, 14, 17-22 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al 6399202 view of Datz et al 2005/0118493.

The instant application is drawn to a fuel cell wherein the claimed inventive concept comprises an electrode comprising at least one modified carbon product having specific group attached thereto. Other limitations include the specific blocking layer and active layer; the binder-free active layer; the specific solid electrolyte membrane; and the specific organic group.

As to claims 1, 17 and 22:

Yu et al disclose gas diffusion electrodes containing modified carbon products wherein the modified carbon product is a carbon product having attached at least one organic group

(abstract). It is further disclosed that the Yu et al's invention relates to gas diffusion electrodes such as the ones used in fuel cells and also relates to modified carbon products used to form one or more components of the gas diffusion electrodes (col 3, lines 44-49/ col 3, lines 56-60). It is disclosed that gas diffusion electrodes prepared with modified carbon material have broad applications, one example of a gas diffusion electrode application would be a phosphoric acid type fuel cell using a pair of gas diffusion electrodes or for solid polymer electrolyte fuel cells (col 8, lines 45-50 & line 54). It is noted that Yu et al mentions publications in which they all are incorporated in their entirety by reference (col 8, lines 45-61). In addition, it is mentioned that the present invention can also be used in fuel cells; wherein each of these applications can incorporate the modified carbon material of the present invention in the electrode to obtain the discussed benefits (col 9, lines 3-4 and lines 8-13). In view of this, it is inherent that a fuel cell should at least comprise two electrodes and an electrolyte to satisfy mechanical, chemical and kinetic requirements (basic components) so as to obtain a fully functional or working fuel cell which converts electrochemical energy into electrical energy.

As previously mentioned, in particular, it is noted that Yu et al in column 2, lines 19-30 and 53-65 incorporates in its entirety by reference the teachings of Dirven et al 5561000 who discloses a gas diffusion electrode for an electrochemical cell with solid electrolyte (ABSTRACT of Dirven et al'000 which is incorporated by reference). It is further disclosed that a fuel cell is mainly composed of the assembly of a cathode, an anode and in between them a solid electrolyte membrane (col 3, lines 7-11 of Dirven et al'000 which is incorporated by reference).

As to claim 3:

It is disclosed that the modified carbon product can be used for at least one component of electrodes such as the active layer and/or the blocking layer (abstract). It is disclosed that with respect to air diffusion electrode which is generally used in fuel cells, this type of electrode generally is constructed to have a blocking layer and an active layer (col 3, lines 62-65).

As to claim 4:

It is disclosed that the blocking layer, the active layer or both contain at least one modified carbon product; thus, it is preferred that the modified carbon product comprise at least one carbon product having attached at least one organic group (col 4, lines 31-47).

As to claims 4, 6, 18-19, 21 and 24-25:

It is disclosed that with respect to the active layer, preferably the active layer contains a modified carbon product wherein the carbon product preferably has attached at least one type if hydrophobic organic group (col 4, line 66 to col 5, line 10). Yu et al also disclose a gas diffusion layer wherein a catalytic layer is formed on a porous back support by mixing catalyst particles of Pt (col 2, lines 50-57); wherein in some cathode structures the solution is made of PT/C catalyst powder (col 2, lines 62-65). It is further noted that Yu et al's teaching refers to a technique disclosed by US patent 5,561,000 which is incorporated in its entirety by reference herein (col 2, lines 19-21 and 50-65). *Thus, Yu et al's teaching fully encompasses the teachings of the '000 patent.*

With respect to claim 5:

It is noted that Yu et al in column 8, lines 38-61 incorporates in its entirety by reference the teachings of Cabasso et al 5783325 who discloses electrolytic gas diffusion electrodes for fuel cells (ABSTRACT of Cabasso et al'325 which is incorporated by reference) wherein the

active catalytic layer has a thickness between about 7 Tm and about 50 Tm (col 4, lines 50-56 of Cabasso et al'325 which is incorporated by reference). It is noted that the disclosed thickness range, particularly from 7-10 Tm, falls within the instantly claimed range. *Accordingly, this thickness magnitude provides good performance, provides a gas diffusion electrode with favorable chemical and electrical properties for fuel cells, provides a gas diffusion electrode with a controlled electrode structure, porosity and size making it possible to formulate each structure with properties that are most suitable for its function.*

As to claim 7:

It is disclosed that one preferred advantage of the present invention is the ability to reduce such fluorine containing compounds in the blocking layer or active layer; the proper choice of organic groups attached onto the carbon product to form the modified carbon product can lead to a decrease if not an elimination of fluorine containing compounds (col 7, line 23-35); such fluorine containing compounds typically used are polytetrafluoroethylene and/or perfluoric sulphonic acid polymer (col 7, lines 17-21).

Regarding claim 8:

It is noted that Yu et al in column 2, lines 19-30 and 53-65 incorporates in its entirety by reference the teachings of Dirven et al 5561000 who discloses gas diffusion electrode with catalyst for an electrochemical cell with solid electrolyte (ABSTRACT of Dirven et al'000 which is incorporated by reference) wherein the electrolyte is made of an ion exchange polymer or ionomer such as polytetrafluoroethylene (col 3, lines 32-40 of Dirven et al'000 which is incorporated by reference). It is taught that solid electrolyte membranes are made of an ion

exchange polymer or ionomer because such material is very suited (col 3, lines 32-40 of Dirven et al'000 which is incorporated by reference).

As to claim 10:

It is disclosed that said organic group is p-$C_6H_4SO_3^-Na^+$ (claim 9). Thus, this specific ionic organic group comprises the instantly claimed organic group.

As to claim 14:

It is disclosed that the functional groups forming anions are ionizable (col 5, lines 15-16) and it is understood that cationic counter ions can be exchanged to other ions through an ion-exchange process (col 5, lines 42-44). Examples of ionizable functional groups that form cationic groups are disclosed (col 5, lines 15-40; col 5, line 57 to col 6, line 15). *Thus, it should be recognized that the organic group is either a proton conducting group or electrode conducting group.*

Yu et al disclose a fuel cell comprising a modified-carbon component as described above. However, the preceding prior art does not expressly disclose the specific active layer thickness and carbon support.

With respect to claims 1, 5, 17 and 20:

Datz et al disclose a gas diffusion electrode for a PEM fuel cell including a metallic catalyst, and an electrocatalyst layer having a uniform thickness of between 3 to 40 μm (ABSTRACT/ SECTION 0013). As part of the electrode structure, Datz et al teach an electrode including a carrier with an electrocatalyst layer, wherein the carrier or substrate used is, preferably, a carbon material or another porous electrically conductive substrate (SECTION

0032). Specifically, platinum on carbon is used (SECTION 0038). *Thus, Datz et al do disclose a substantially similar electrode structure made of substantially the same active material.*

In particular, Datz et al disclose that the thickness of the electrocatalyst layer is less than or equal to 20 μm (SECTION 0015), particularly, having a uniform thickness of between 3 and 20 μm (CLAIMS 3 and 24). *Thus, Datz et al's teaching points toward the lower end of the range, and thus at once envisage the claimed range. In this case, it is noted that, at least, the end point (i.e. 3 μm) constitutes a valid data point and thus it covers the claim as the end point represents a specific disclosure of a discrete embodiment of the invention disclosed by the prior art which amounts to a complete description and, therefore, it does touch the claimed range.* ***See Ex Parte Lee 31 USPQ2d 1105.***

As to claims 24-25:

Datz et al teach an electrode including a carrier with an electrocatalyst layer, wherein the carrier or substrate used is, preferably, a carbon material or another porous electrically conductive substrate (SECTION 0032). Specifically, platinum on carbon is used (SECTION 0038). Datz et al teach the hydrophobicization of the electrode.

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the electrode as a whole, and thus, the active layer of Yu et al by having the specific thickness of Datz et al as Datz et al teach that such specific active layer thickness is particularly advantageous in the fuel cell field as it provides a gas diffusion electrode having an improved homogeneity of the layer thickness because the electro-catalyst material can be processed better. Additionally, the gas diffusion electrode requires no addition of polymer to

maintain its mechanical stability, and as a consequence, hydrophobicization of the gas diffusion electrode with a low proportion of polymer is achieved.

With respect to the carbon support, it would have been obvious to one skilled in the art at the time the invention was made to use the specific carbon support of Datz et al in the fuel cell electrode of Yu et al because Datz et al teach that the claimed carbon support is a gas permeable-electrically conductive substrate material suitable for use as an electrode support or substrate. Therefore, the claimed carbon substrate exhibits good gas permeability and electrical conductivity for use as a gas diffusion electrode.

8. Claims 17-19 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al 6399202 view of the publication "*New Process for Loading Highly Active Platinum on Carbon Black Surface for Application in Polymer Electrolyte Fuel Cell*" by Amine et al (herein called "*Amine et al's publication*").

The instant application is drawn to a fuel cell wherein the claimed inventive concept comprises an electrode comprising at least one modified carbon product having specific group attached thereto. Other limitations include the specific blocking layer and active layer; the binder-free active layer; the specific solid electrolyte membrane; and the specific organic group.

As to claims 17 and 22:

Yu et al disclose gas diffusion electrodes containing modified carbon products wherein the modified carbon product is a carbon product having attached at least one organic group (abstract). It is further disclosed that the Yu et al's invention relates to gas diffusion electrodes such as the ones used in fuel cells and also relates to modified carbon products used to form one

or more components of the gas diffusion electrodes (col 3, lines 44-49/ col 3, lines 56-60). It is disclosed that gas diffusion electrodes prepared with modified carbon material have broad applications, one example of a gas diffusion electrode application would be a phosphoric acid type fuel cell using a pair of gas diffusion electrodes or for solid polymer electrolyte fuel cells (col 8, lines 45-50 & line 54). It is noted that Yu et al mentions publications in which they all are incorporated in their entirety by reference (col 8, lines 45-61). In addition, it is mentioned that the present invention can also be used in fuel cells; wherein each of these applications can incorporate the modified carbon material of the present invention in the electrode to obtain the discussed benefits (col 9, lines 3-4 and lines 8-13). In view of this, it is inherent that a fuel cell should at least comprise two electrodes and an electrolyte to satisfy mechanical, chemical and kinetic requirements (basic components) so as to obtain a fully functional or working fuel cell which converts electrochemical energy into electrical energy.

As previously mentioned, in particular, it is noted that Yu et al in column 2, lines 19-30 and 53-65 incorporates in its entirety by reference the teachings of Dirven et al 5561000 who discloses a gas diffusion electrode for an electrochemical cell with solid electrolyte (ABSTRACT of Dirven et al'000 which is incorporated by reference). It is further disclosed that a fuel cell is mainly composed of the assembly of a cathode, an anode and in between them a solid electrolyte membrane (col 3, lines 7-11 of Dirven et al'000 which is incorporated by reference).

It is disclosed that the modified carbon product can be used for at least one component of electrodes such as the active layer and/or the blocking layer (abstract). It is disclosed that with respect to air diffusion electrode which is generally used in fuel cells, this type of electrode

generally is constructed to have a blocking layer and an active layer (col 3, lines 62-65). It is disclosed that the blocking layer, the active layer or both contain at least one modified carbon product; thus, it is preferred that the modified carbon product comprise at least one carbon product having attached at least one organic group (col 4, lines 31-47).

As to claims 18-19, 21 and 24-25:

It is disclosed that with respect to the active layer, preferably the active layer contains a modified carbon product wherein the carbon product preferably has attached at least one type if hydrophobic organic group (col 4, line 66 to col 5, line 10). Yu et al also disclose a gas diffusion layer wherein a catalytic layer is formed on a porous back support by mixing catalyst particles of Pt (col 2, lines 50-57); wherein in some cathode structures the solution is made of PT/C catalyst powder (col 2, lines 62-65). It is further noted that Yu et al's teaching refers to a technique disclosed by US patent 5,561,000 which is incorporated in its entirety by reference herein (col 2, lines 19-21 and 50-65). *Thus, Yu et al's teaching fully encompasses the teachings of the '000 patent.*

It is disclosed that one preferred advantage of the present invention is the ability to reduce such fluorine containing compounds in the blocking layer or active layer; the proper choice of organic groups attached onto the carbon product to form the modified carbon product can lead to a decrease if not an elimination of fluorine containing compounds (col 7, line 23-35); such fluorine containing compounds typically used are polytetrafluoroethylene and/or perfluoric sulphonic acid polymer (col 7, lines 17-21).

It is noted that Yu et al in column 2, lines 19-30 and 53-65 incorporates in its entirety by reference the teachings of Dirven et al 5561000 who discloses gas diffusion electrode with

catalyst for an electrochemical cell with solid electrolyte (ABSTRACT of Dirven et al'000 which is incorporated by reference) wherein the electrolyte is made of an ion exchange polymer or ionomer such as polytetrafluoroethylene (col 3, lines 32-40 of Dirven et al'000 which is incorporated by reference). It is taught that solid electrolyte membranes are made of an ion exchange polymer or ionomer because such material is very suited (col 3, lines 32-40 of Dirven et al'000 which is incorporated by reference).

It is disclosed that said organic group is p-$C_6H_4SO_3^-Na^+$ (claim 9). Thus, this specific ionic organic group comprises the instantly claimed organic group.

It is disclosed that the functional groups forming anions are ionizable (col 5, lines 15-16) and it is understood that cationic counter ions can be exchanged to other ions through an ion-exchange process (col 5, lines 42-44). Examples of ionizable functional groups that form cationic groups are disclosed (col 5, lines 15-40; col 5, line 57 to col 6, line 15). *Thus, it should be recognized that the organic group is either a proton conducting group or electrode conducting group.*

Yu et al disclose a fuel cell comprising a modified-carbon component as described above. However, the preceding prior art does not expressly disclose the specific carbon support.

With respect to claims 17-19 and 23:

Amine et al's publication discloses a process for loading active platinum on carbon black surface for application in polymer electrolyte fuel cell (TITLE). In particular, Amine et al's publication teaches the deposition of platinum on various carbon blacks by forming active functional groups on the surface of the carbon support, and exchanging these active groups with different platinum complexes (ABSTRACT/ 1. INTRODUCTION/ 2. EXPERIMENTAL).

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to use the specific carbon support of the Amine et al's publication in the fuel cell electrode of Yu et al as the Amine et al's publication teaches that such specific carbon support material shows high diffusion rate of ion exchange; resulting on having most of platinum loaded mainly adsorbed and coagulated on the surface of carbon black, thereby exhibiting a superior and high catalytic activity.

Response to Arguments

9. Applicant's arguments with respect to the foregoing claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond Alejandro
Primary Examiner
Art Unit 1745